STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
State Revolving Fund Loan Program
L & C Tower, 8th Floor
401 Church Street
Nashville, TN 37243

FINDING OF NO SIGNIFICANT IMPACT
Approval of Facilities Plan
Water Authority of Dickson County (Williamson County), Tennessee
Project No. SRF 2006-194

October 2, 2007

The National Environmental Policy Act requires federally designated agencies to determine whether a proposed major agency action will significantly affect the environment. One such major action, defined by Section 511(c)(1) of the Clean Water Act, is the approval of a facilities plan prepared pursuant to Title VI of the Clean Water Act. In making this determination, the State Revolving Fund (SRF) Loan Program assumes that all facilities and actions recommended by the plan will be implemented. The state's analysis concludes that implementing the plan will not significantly affect the environment; accordingly, the SRF Loan Program is issuing this Finding of No Significant Impact (FNSI) for public review.

The Water Authority of Dickson County has completed the facilities plan entitled "Sewer Treatment Plant Improvements for Fairview Sewer Treatment Plant" dated February 2007. The facilities plan provides recommendations for improvements to the wastewater treatment system serving the City of Fairview. This project includes replacing the mechanically cleaned bar screen at the headworks; repairs to the existing grit chamber; the addition of disks to the existing rotors in the existing oxidation ditch, flow paced feed pumps to add coagulant prior to the existing clarifiers, cloth media filter after the existing clarifiers, and a new sludge pumping station; and the installation of approximately 12,000 linear feet of 4-inch diameter forcemain to transport digested sludge from the existing aerobic digestor to the Jones Creek wastewater treatment plant for processing. The total estimated project cost is $2,321,000.00. A State Revolving Fund loan in the amount of $2,000,000.00 has been requested for this project.

Attached is an Environmental Assessment containing detailed information supporting this proposed action. Comments supporting or disagreeing with this proposed action received within 30 days of the date of this FNSI will be evaluated before we make a final decision to proceed. If you wish to comment or to challenge this FNSI, send your written comment(s) to:

Mr. Sam R. Gaddipati, Environmental Manager
State Revolving Fund Loan Program
Tennessee Department of Environment and Conservation
L & C Tower, 8th Floor
401 Church Street
Nashville, TN 37243

or contact him by telephone at (615) 532-0445 or by e-mail at sam.gaddipati@state.tn.us.

ENVIRONMENTAL ASSESSMENT
Fairview (Williamson County), Tennessee
Project No. SRF 2006-194

October 2, 2007

A. PROPOSED FACILITIES AND ACTIONS; FUNDING STATUS

This project includes replacing the mechanically cleaned bar screen at the headworks; repairs to the existing grit chamber; the addition of disks to the existing rotors in the existing oxidation ditch, flow paced feed pumps to add coagulant prior to the existing clarifiers, cloth media filter after the existing clarifiers, a new sludge pumping station; and the installation of approximately 12,000 linear feet (LF) of 4-inch diameter forcemain to transport digested sludge from the existing aerobic digestor to the Jones Creek wastewater treatment plant (WWTP) for processing. The facilities planning area and project location are indicated on Figures No. 1 and 2 of this Environmental Assessment. Descriptions of the proposed facilities and actions included in this project are listed below:

FUNDING STATUS

The facilities described above comprise the scope of Clean Water State Revolving Fund Loan No. 2006-194 scheduled for funding in fiscal year 2008. The estimated project costs are summarized in the following tabulation:

PROJECT CLASSIFICATIONS	COSTS ($)
Land Costs & Appraisals	22,000.00
Design Fees	115,000.00
Engineering Basic Fees	30,000.00
Other Engineering Fees	30,000.00
Resident Inspection	100,000.00
Construction	2,024,000.00
TOTAL	**2,321,000.00**
State Revolving Fund Loan	2,000,000.00
Other Funds	321,000.00

The Water Authority of Dickson County (WADC) has applied for a $2,000,000.00 State Revolving Fund (SRF) loan. The Water Authority of Dickson County will fund the remainder of the project's costs.

B. EXISTING ENVIRONMENT

This project targets improving service to the Fairview wastewater treatment system currently owned and operated by the WADC. The Fairview Planning Area is located in Williamson County in middle Tennessee. A discussion of existing environmental features in the Fairview Planning Area include the following:

SURFACE WATERS

Surface waters within the proposed project area include the South Harpeth River and its associated tributaries. The tributaries of the South Harpeth River include Brush Creek, Harrison Branch, West Fork Brush Creek, and Flatrock Branch.

GROUNDWATER

Groundwater is provided by Mississipian and Ordovician Age aquifers. The Fairview municipal water system obtains its water from the Water Authority of Dickson County and Harpeth Valley Utility District. Raw water sources include the Piney River, Turnbull Creek, and the Cumberland River. Many people located in the southwest part of the City and outside the City limits are served by individual wells.

SOILS

Soil associations occurring in the Fairview Planning Area are mainly from the Mountview-Baxter-Bodine Association. They are characterized by rolling hills. Approximately twenty to forty inches of loess mantles the hilltops, and cherty soils are on nearly all of the hillsides. Shallow and deep drains are numerous throughout the area. Except for a few creek bottoms, level strips in the drainageways are generally less than 200 feet wide.

TOPOGRAPHY

The topography in the proposed project area is characteristically rolling to very hilly, dissected by relatively narrow to slightly broader stream channels. Elevations range from approximately 850 feet above mean sea level (MSL) in the hilltops to 550-600 feet MSL in the stream bottoms.

OTHER ENVIRONMENTAL FEATURES

No wild or scenic rivers or unique agricultural, scientific, cultural, ecological, or natural areas were identified in the Fairview Planning Area.

C. EXISTING WASTEWATER FACILITIES

Fairview's collection system and WWTP were constructed in 1988. Grinder pumps deliver wastewater from individual homes and businesses into a pressurized network of small diameter pipes. There are approximately 276,500 LF of sewer lines ranging from 1.5-inch diameter low pressure lines to 8-inch diameter gravity lines. The 15 pumping stations in the collection system range in size from 45 gallons per minute (gpm) to 900 gpm, and there are a total of 1,800 grinder pumps in the collection system.

All influent flow to the Fairview WWTP is pumped from the collection system to the headworks through an influent flow meter. A mechanically cleaned screen is the initial treatment followed by a conical grit chamber. Aeration is provided by a two-channel oxidation ditch with disc aerators. Two clarifiers follow the oxidation ditch. The clarifiers are 29 feet in diameter with a side water depth of 11 feet. Waste sludge from the clarifiers circulates to a sludge digestor with a capacity of 85,531 gallons. All sludge from the digestor is currently trucked to the Jones Creek WWTP for ultimate treatment and disposal. Flow from the clarifiers is directed to a chlorine contact chamber for disinfection. The treated effluent passes through an effluent weir and subsequently through a 10-inch diameter outfall line for discharge into Flatrock Branch at River Mile 2.15. The original and current design capacity of the Fairview WWTP is 0.47 million gallons per day (MGD).

The Water Authority of Dickson County owns and operates the Jones Creek WWTP that serves the City of Dickson. The WWTP was constructed in 1977 and has a design capacity of 4 MGD. The treatment process utilizes an oxidation ditch and chlorination prior to discharge to Jones Creek. The sludge treatment process utilizes the N-Viro process that includes a belt filter press and lime stabilization and produces a Class "A" sludge. The sludge treatment process has the capacity to accept the additional sludge from the Fairview WWTP. The Jones Creek WWTP discharges treated effluent to Jones Creek at River Mile 21.7 and operates under the National Pollutant Discharge Elimination System (NPDES) Permit No. TN0066958.

The Fairview WWTP currently operates under the NPDES Permit No. TN0062332 that includes the following parameters and effluent limitations:

PARAMETER	EFFLUENT LIMITATIONS
$CBOD_{5\ (May\ 1\text{-}Oct.\ 31)}$	15 milligrams per liter (mg/l)
$CBOD_{5\ (Nov.\ 1\text{-}April\ 30)}$	25 milligrams per liter (mg/l)
Suspended Solids	30 mg/l
E. coli	126/100 colonies per milliliter
Dissolved Oxygen	6.0 mg/l instantaneous minimum
Ammonia as N (May 1-October 31)	1.09 mg/l
Ammonia as N (Nov. 1-April 30)	2.07 mg/l
Total Nitrogen (May 1- Oct. 31)	5.0 mg/l
Total Phosphorous (May 1-Oct. 31)	0.5 mg/l
Copper, Total	0.0258 mg/l
Cyanide, Total	0.0052 mg/l
Thallium	0.0063 mg/l
Chlorine Residual, Total	0.02 mg/l instantaneous maximum
Settleable Solids	1.0 daily maximum (milliliter/liter)
pH	6.5-8.5 (Standard Units)

D. NEED FOR PROPOSED FACILITIES AND ACTIONS

The Tennessee Department of Environment and Conservation (TDEC), Division of Water Pollution Control (DWPC), has issued a Director's Order to WADC for failure of the Fairview WWTP to meet the currently permitted effluent standards. The Director's Order cited permit violations for whole effluent toxicity limits, ammonia limits, nitrogen limits, cyanide limits, phosphorous limits, pH limits, total suspended solids limits, suspended solids minimum percent removal limits, carbonaceous biochemical oxygen demand minimum percent removal limits, failure to report required data, bypasses of treatment, and collection system overflows.

Since the Fairview WWTP was originally constructed, equipment has aged and is in need of replacement. In order to comply with the Director's Order and meet existing effluent limitations, the Fairview WWTP is in need of repair and upgrade.

Existing and projected facility conditions in the following chart:

EXISTING AND PROJECTED FACILITY CONDITIONS

POPULATION	EXISTING (2007)	PROJECTED (2027)
Fairview	7,001	12,000
% Sewered	87%	88%
Total Planning Area	7,001	14,000
% Sewered	87%	88%

FAIRVIEW WWTP FLOWS (MGD)	EXISTING (2007)	PROJECTED (2027)
Domestic/Commercial	0.39	0.39
Industrial	0.05	0.05
Infiltration	0.02	0.02
Inflow (during rainfall events)	0.01	0.01
TOTAL	0.47	0.47

The design flows do not include excessive infiltration and inflow. The Fairview WWTP currently is treating its design capacity of 0.47 MGD. A portion of the flow currently being pumped to the Fairview WWTP from the northwestern Fairview area will be redirected to the Jones Creek WWTP via a forcemain that is currently under construction. The project is scheduled to be complete by the end of 2007.

E. ALTERNATIVES ANALYSIS

Several alternatives, including a "No-action" alternative, were evaluated for wastewater treatment and management in the February 2007 facilities plan. A summary discussion of the evaluation of each alternative for wastewater treatment and the selection of the recommended plan follows:

NO ACTION

The "No-action" approach was not a viable alternative. The state and federal governments have issued discharge limitations that must be met in order to maintain or improve surface water conditions. These parameters cannot be met by the facilities as they now exist. Therefore, some action must be taken to protect the environment and public health, and this alternative was rejected.

ALTERNATIVES FOR TREATMENT

The mechanically cleaned bar screen at the headworks must be replaced. Additional sludge facilities will be needed for the increased sludge produced by increased phosphorous removal. A new sludge pumping station will be constructed at the existing aerobic digestor. The digested sludge will be pumped to the Jones Creek WWTP via approximately 12,000 LF of 4-inch

diameter forcemain for ultimate treatment and disposal. These improvements are common to all alternatives.

Anaerobic Basin Installed Prior to Existing Oxidation Ditch

This alternative would involve installing a 100,000 gallon anaerobic basin prior to the existing oxidation ditch. Some oxygen, input via coarse bubble aeration at 100-200 standard cubic feet per minute, would be added to provide extra oxygen during high load periods. Mixing of the anaerobic basin will be required. Return sludge from the existing clarifiers would be pumped to the influent of the anaerobic basin. This process will allow the release of phosphorous in the water and uptake it into microorganisms for removal by wasting sludge. Chemical addition of a metal salt such as alum or ferric chloride would be provided by flow paced feed pumps prior to the clarifiers to aid phosphorous removal. This alternative was not determined to be the most cost-effective and was rejected.

Utilize the Existing Fairview WWTP as a Pretreatment Facility

This alternative would involve utilizing the Fairview WWTP as a pretreatment facility and pump all the treated effluent from the Fairview WWTP to the Jones Creek WWTP for final treatment and disposal. This would result in no discharge into Flatrock Branch. This alternative would require construction of a pumping station at the Fairview WWTP and a forcemain to the Jones Creek WWTP. This alternative was not the most cost-effective for this project and was rejected.

Installation of a Cloth Media Filter after the Existing Clarifiers

This alternative would involve installing a cloth media filter after the existing clarifiers to remove the non-soluble phosphorous and suspended solids. The filter would be placed on a concrete sump and housed in a metal building for weather protection. Additional discs would be added to the existing rotors in the existing oxidation ditch up to the horsepower rating of the drive motors. This would improve control of the anoxic and aerobic zones within the oxidation ditch, thus enhancing the nitrification and denitrification processes. Flow paced feed pumps will be installed prior to the existing clarifiers for the addition of a metal salt to facilitate phosphorous removal. This alternative is the most cost-effective for this project and is selected.

SLUDGE TREATMENT/DISPOSAL

Currently, all digested sludge from the Fairview WWTP is being trucked to the Jones Creek WWTP for ultimate treatment and disposal. As a result of this project, all of the digested sludge from the Fairview WWTP will be transported to the Jones Creek WWTP via the new sludge pumping station and approximately 12,000 LF of 4-inch diameter forcemain. The new forcemain will connect into an existing 8-inch diameter forcemain on Horn Tavern Road north of the intersection of CCC Road and Horn Tavern Road. When the connection is made between the new forcemain and the existing forcemain, the portion of the flow that is currently being directed southward toward the Fairview WWTP in order to treat raw sewage will be redirected northward in order to carry the digested sludge from the Fairview WWTP through Pump Station No. 2 to Pump Station No. 3 and on to the Jones Creek WWTP for treatment and disposal. At Pump Station No. 3, raw sewage currently being transported from the northwestern Fairview area will mix with the digested sludge, and both will be pumped to the Jones Creek WWTP for ultimate

treatment and disposal. The Jones Creek WWTP currently produces a Class "A" sludge utilizing the "N-Viro" process that includes a belt filter press and lime stabilization.

F. ENVIRONMENTAL CONSEQUENCES; MITIGATIVE MEASURES

The environmental benefits of this project will be a reduction in permit violations and the improvement of water quality conditions in the area.

During the construction phase, short-term environmental impacts due to noise, dust, mud, disruption of traffic, runoff of silt with rainfall, etc., are unavoidable. Minimization of these impacts will be required; however, many of these minimization measures will be temporary and only necessary during construction. Using the following measures to prevent erosion will minimize impacts on the environment:

1. Specifications will include temporary and permanent measures to be used for controlling erosion and sediment.
2. Soil or landscaping maintenance procedures will be included in the specifications.
3. The contractor will develop an Erosion Control Plan. It will contain a construction schedule for each temporary and permanent measure controlling erosion and sediment. It will include the location, type, and purpose for each measure and the times when temporary measures will be removed or replaced.

These measures, along with requiring the contractor to return the construction site to as-good-as or better-than its original condition, will prevent any adverse impacts due to erosion.

The state's Historic Preservation Officer has reviewed the project and has determined that the project will not impact known significant cultural resources.

A biological assessment of the project area for the proposed 4-inch diameter forcemain will be required prior to the approval of construction plans and specifications. Any findings that must be preserved shall be removed/protected/preserved in accordance with state and federal laws, regulations, and/or policies.

G. PUBLIC PARTICIPATION; SOURCES CONSULTED

A Public Meeting was held on May 15, 2007, at 7:00 p.m., local time. The selected plan for wastewater treatment and user charges were described to the public, and their input was received. This agency is not aware of any unresolved public objections that may have been voiced before or after the public meeting regarding this project.

The existing user charges are projected to be sufficient to repay the SRF loan. Therefore, no incremental increase in user charges will be required.

Sources consulted about this project for information or concurrence were:

1. Tennessee Department of Agriculture
2. Tennessee Department of Economic and Community Development (ECD)
3. TDEC, Division of Air Pollution Control (DAPC)
4. Tennessee Department of Transportation (TDOT)
5. TDEC, Division of Groundwater Protection (DGWP)
6. Tennessee Historical Commission
7. TDEC, Division of Archaeology (DA)
8. TDEC, Division of Natural Areas (DNA)
9. TDEC, Division of Solid Waste Management (DSWM)
10. TDEC, Division of Water Pollution Control (DWPC)
11. TDEC, Division of Water Supply (DWS)
12. Tennessee Wildlife Resources Agency (TWRA)
13. United States Army, Corps of Engineers (USACE)
14. United States Fish and Wildlife Service (USF&W)
15. City of Fairview
16. Williamson County
17. Mr. Scott Woodard, P.E., CTE Engineers, Nashville, TN
18. WADC

H. SPECIAL CONDITIONS

The State Revolving Fund loan agreement will have the following special condition:

> A qualified botanist shall conduct a botanical survey for the state-listed threatened species the Purple Milkweed (Asclepias purpurascens) and the Eggert's Sunflower (Helianthus eggertii) along the route of the proposed 4-inch diameter forcemain. Copies of the assessment and findings must be submitted to the Tennessee Division of Natural Areas (Roger McCoy, (615) 532-0431) and the State Revolving Fund Loan Program (Dave Shell, (615) 532-0480).